

W5YI

America's Oldest Ham Radio Newsletter

REPORT

Up to the minute news from the world of amateur radio, personal computing and emerging electronics. While no guarantee is made, information is from sources we believe to be reliable.

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FCC Proposes Low Power Radio Broadcast Service

Pirates May Be Ineligible Unless "Rehabilitated"

At a January 28 public meeting, the Federal Communications Commission took the first step toward creating relatively low cost community "alternative voice" radio stations. It proposed to introduce Low Power FM (LPFM) broadcasting which has not been available since 1978. The proposal launches the FCC itself into what is likely to be tremendous controversy and a predicted "land rush" as thousands try to grab radio licenses.

The *Notice of Proposed Rulemaking* (NPRM) in Mass Media (MM) Docket 99-25 proposes to create new 1000 W (LP1000) and 100 W (LP100) FM stations, and to reduce or eliminate rules designed to limit interference to FM stations located on second and third adjacent frequencies to a given station. Hundreds, if not thousands of small broadcasters could be approved to run relatively inexpensive low power FM radio stations.

The NPRM comes after the Commission received several petitions to create LPFM services, as well as some 13,000 inquiries last year from persons wanting to start low power stations. Two of the petitioners are Extra Class ham operators: Nikolaus Leggett N3NL of Reston, Virginia and Rodger Skinner W4FM of Pompano Beach, Florida.

Last year also saw intense activity by "pirate" unlicensed "micro radio" stations. Former pirates who refused to shut down their stations may not have access to LPFM licenses, FCC staff said, un-

less the pirates could demonstrate that they had "rehabilitated" themselves. But "we leave it open -- we did not slam the door on those people," said Mass Media Bureau chief Roy Stewart.

At antenna height of 60 meters, LP1000 stations could serve an 8.8 mile radius, the FCC said, while LP100 stations could serve 3.5 miles from 30 meter height.

The NPRM covers many LPRM issues including:

Status. LP1000 stations would be primary on the frequency, while LP100 stations would be secondary and must accept any interference they may receive.

Type of station. Should LPFM stations be commercial, noncommercial, or both?

Ownership. The FCC proposed that existing broadcasters could not own or have any joint sales or marketing agreements with a LPFM station. No one could own more than one LPFM station in the same community.

Electronic filing. The FCC proposed that license applications be filed electronically, but expressed concern that those with slower Internet connections might be at a disadvantage.

Filing windows. Short "windows" of only a few days would limit the number of applications, but the

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FCC asked for comment on whether longer windows, or a first-come, first-served procedure would be preferable.

Auctions. Mutually exclusive applications (more than one applicant for an available frequency) would have to be resolved by auctions, but the FCC asked for comment on other means to avoid mutual exclusivity.

It seems to us that auctions would not be used to resolve mutually exclusive noncommercial applications. In such cases, Congress allows the FCC to use lotteries to decide who gets a license.

The FCC did not propose to create micro radio stations (1-10 W); it is only accepting comments on micro radio. (This matter caused amusing confusion at the FCC LPFM press conference. Roy Stewart told reporters that the FCC is proposing micro radio, while FCC engineer Keith Larson repeatedly indicated that the FCC was not proposing such stations.)

Groups representing noncommercial and micro radio interests cautiously praised the proposal, while the *National Association of Broadcasters* fumed that LPFM would "devastate" the FM band. The NAB is one of Washington's most powerful lobbying groups.

Industry groups are preparing to move U.S. radio broadcasting to digital format, through an "in-band on-channel" (IBOC) approach. NAB warned that LPFM could harm transition to IBOC.

Unlike most other countries, which allocated new spectrum to digital radio, U.S. AM and FM stations will have to stay in their current bands ("in-band") and transmit digital signals on their current channels ("on-channel"). We have heard that the FCC has performed no research to determine whether LPFM could retard IBOC. The effect of LPFM on IBOC could be the "show stopper" that prevents the service from ever taking off.

The Chairman speaks

At the FCC, LPFM is largely a campaign of William Kennard, the FCC's first African-American Chairman and a frequent critic of consolidation in the broadcast industry. Former limits on station ownership have been lifted by Congress, leaving companies free to amass hundreds or thousands of radio stations.

The consolidation in broadcasting was triggered by the deregulation of the telecommunications industry in 1996. According to FCC officials, it has sharply reduced the variety of programming available to listeners and has made it difficult for minorities and community groups to make their voices heard.

Mr. Kennard's passionate speech at the public meeting provided much insight into his motivation for pushing low power radio and bucking incumbent broadcasters

"Since I've had this job," Mr. Kennard said, "I've had

the opportunity to talk to a lot of Americans around the country about broadcasting... Many, many people have told me that there should be more opportunities for people who want to become broadcasters.

"We all know that as more and more stations become concentrated in fewer and fewer hands, there are fewer opportunities for people who want to use the airwaves to speak to their communities. That's why I believe these proposals are so important.

"These proposals would create a whole new FM service, a whole new class of voices using the airwaves to speak to their communities. Opportunities for churches, and community groups, and non-profit organizations, small business, and minority groups, so many of whom feel that they are being frozen out of opportunities to become broadcasters.

"Questions have been raised in this proceeding already about interference. Will we create a class of new low power stations that will wreak havoc in the FM band? Of course we won't do that. This agency is the guardian of the spectrum. We work long and hard here to make sure there isn't interference, to police the spectrum. This will be no different with the low power radio service.

"But I believe that this agency has always been at its best, has had its shining moments, when it has authorized new services for the public--often over the vehement objections of incumbents.

"We did that with cable television. We did that with direct broadcast satellites. We did that with the digital audio radio service. We did that with low power television. Think of the richness that we have brought to the country by allowing people to have these opportunities to bring new voices and new programming services to the American public.

"And that's what LPFM promises to do. We will be mindful of interference concerns. We will be mindful of the need to ensure that the broadcast industry has opportunities to convert to digital. No one wants to leave the broadcast industry on the sidelines of the digital revolution, or condemn them to an analog world, least of all me.

"But let's seriously consider these proposals and move ahead - and not discard them just because they might be inconvenient to the established broadcast industry.

"So, today I want to challenge the existing broadcasters to work with us, to find ways that we can have a low power radio service that co-exists with the incumbent services. So that we can work together to maximize the use of the public's airwaves for the benefit of all Americans. Thank you."

FCC Chairman Kennard also asked the industry not to use "interference concerns as a smoke screen for other matters" - meaning a feat of greater competition.

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Interference a key concern

Joining Chairman Kennard in voting for the NPRM were Commissioners Gloria Tristani, Susan Ness and Michael Powell. Commissioner Powell asked that commenters "develop a full, objective record" regarding potential interference problems that LPFM might bring. "I intend to consider interference questions very seriously before taking final action," he said.

Commissioner Ness said that three issues will be in the forefront in LPFM

- (1.) Whether LPFM should be open only to noncommercial entities;
- (2.) Whether LPFM would affect IBOC; and
- (3.) Whether LPFM would create undue interference to full power stations.

"Those interested in low power radio must seriously assess the economic requirements of launching and sustaining a new business, whether on a commercial or non-commercial basis," Commissioner Ness cautioned. She also warned that IBOC "should not be undermined or compromised" by LPFM.

Commissioner Tristani bluntly stated that "of course, we must protect existing users of the spectrum against unacceptable levels of interference. ...But we shouldn't confuse protection of the spectrum with protection of our existing rules. Our interference rules were not written on high. They are not a sacred cow. Like all of our rules, changes in technology or changes in the competitive landscape may permit our interference rules to be modified."

A Commissioner dissents

FCC Commissioner Harold Furchtgott-Roth could not be present at the meeting. He had already voted NO on the NPRM, but this fact was not revealed until later when reporters questioned one of his assistants. While the public meeting gave the impression that the decision to release the NPRM was unanimous, it was anything but!

The FCC later released Commissioner Furchtgott-Roth's formal opposing statement. It is interesting indeed! We've summarized his key points below

- Very few new stations could be licensed in major urban markets even if the second and third adjacent channel protections were completely dropped. New York City could have no LP1000 stations or LP100 stations.
- LPFM is supposed to help minorities and women, but there is no way to ensure that they get the licenses.
- The FCC proposed to impose strict ownership restrictions on LPFM, but Congress removed limits on ownership of stations in the Telecommunications Act

of 1996.

- Instead of LPFM, people could buy existing stations, buy air time on the stations, or communicate via "...amateur radio, e-mail, Internet home pages, bulletins and flyers."
- LPFM enforcement will be a drain on the FCC and will require it to micromanage even the smallest stations.
- Some believe that consolidation of radio ownership is bad, but Congress made it the law.
- Many people are interested in LPFM, but the FCC is responsible for stirring up this interest by putting information on its Web site that "is simply not an objective assessment of the rulemaking and the issues that it raises. For example, the summary describes the possible advantages of low power radio but makes no mention of the potential drawbacks."

Reactions from others

"The devil will be in the details of the proposal," said Pete Tridish of the Prometheus Radio Project located on the Internet at: <<http://home.earthlink.net/~prometheusrp>>. "We really want to see that spectrum scarcity be handled as much as possible through sharing and promoting access, as opposed to a very few lucky ones who win an auction or lottery."

The project warned that "Pirate radio stations will keep popping up until the ban is lifted and new, fair rules for awarding licenses to community groups are in place."

"We could lose by winning," said Peter Franck of the National Lawyers Guild Committee on Democratic Communications <www.nlgcdc.org>. "If the FCC moves to legalize micro radio, but then favors commercial applications and auctions of licenses, the thousands of community groups who have waited for access to the airwaves will lose miserably."

"If Low Power FM is proven to critically disable incumbent broadcasters' signals, it should not be implemented," according to Michael Bracy of the Low Power Radio Coalition <www.lowpowerradio.org>. "We believe, however, that engineering studies will demonstrate that Low Power FM is a viable mechanism to serve the multitude of voices calling for increased access to broadcast radio."

But, as might be expected, at least one group argues otherwise. "This proposal to add as many as 4,000 low-power stations to an already-congested radio band threatens the transition to IBOC digital radio, will likely cause devastating interference to existing broadcasters, and will challenge the FCC as guardian of the spectrum," said the National Association of Broadcasters (NAB).

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AMATEUR RADIO STATION CALL SIGNS

...sequentially issued as of the first of February 1, 1999:

Radio District	Group A Extra	Group B Advanced	Group C Tech/Gen.	Group D Novice
0 (*)	AB0II	KI0PG	(***)	KC0EWV
1 (*)	AA1UI	KE1KX	(***)	KB1DQO
2 (*)	AB2FZ	KG2PP	(***)	KC2EPL
3 (*)	AA3SC	KF3CK	(***)	KB3DJF
4 (*)	AF4NH	KU4YC	(***)	KG4BTJ
5 (*)	AC5SF	KM5UD	(***)	KD5GEI
6 (*)	AD6HS	KQ6ZM	(***)	KF6USM
7 (*)	AC7AI	KK7RU	(***)	KD7DXO
8 (*)	AB8DQ	KI8HM	(***)	KC8LQE
9 (*)	AA9WW	KG9PD	(***)	KB9UBJ
N. Mariana	NH0J	AH0BC	KH0HS	WH0ABIJ
Guam	(**)	AH2DJ	KH2UC	WH2ANX
Hawaii	NH7T	AH6PS	KH7QR	WH6DFE
Am. Samoa	AH8R	AH8AH	KH8DM	WH8ABG
Alaska	AL0N	AL7RI	KL0RY	WL7CVA
Virgin Isl.	(**)	KP2CP	NP2KG	WP2AIJ
Puerto Rico	NP3Z	KP3BM	NP3ZZ	WP4NOL

* = All 1-by-2 & 2-by-1 Group "A" call signs have been assigned. Group "A": 2-by-2 format call signs now being assigned.

** = All 2-by-1 call signs have been assigned.

*** = Group "C" (N-by-3) call signs have now run out in all call districts. Group "D" (2-by-3) format call signs are now being assigned

Note: New prefix numerals now being assigned in Puerto Rico (KP3/NP3), Hawaii (AH7/KH7) and Alaska (AL0/KL0)

[Source: FCC Amateur Service Database, Washington, DC]

NEW AND UPGRADING AMATEUR STATISTICS

For the Month of January 1997, 1998 & 1999

License Class	New Amateurs			Upgrading Amateurs		
	1997	1998	1999	1997	1998	1999
Novice	59	41	41	7	0	0
Technician	1362	912	724	24	0	1
Tech Plus	101	78	79	268	249	159
General	26	16	17	303	260	154
Advanced	4	4	4	239	198	127
Extra Class	1	2	6	174	147	77
Total:	1553	1053	871	1015	854	518
Decrease:	(40%)	(32%)	(17%)	(49%)	(16%)	(39%)

• The above statistics are extracted from the FCC database which indicates (with the letter "A" in the record) first time licensed amateurs and those amateurs who upgraded their license (indicated with the letter "B".) Using database software, we simply format a report of the number of "A's" and "B's" within a specified "date-of-license-issued" range. The number of new and upgrading amateurs has been steadily declining over the past five years.

The VEC System examination statistics show the same thing. Furnished by the FCC, these stats are based on examination data filed electronically by the VECs. Here is a comparison with 1998 and five years ago.

Year:	Persons	Examinations	Sessions
1994	106,670	194,584	11,638
1998	56,501	94,123	9,020
Difference:	(47.0%)	(51.6%)	(22.5%)

Volunteer Examiner Coordinator Report - January 1995 through December 1998

Report indicates number of examination sessions, persons examined, total elements administered and average session size for the last four years. Note that the only two months with an increase in the number of applicants and exam elements administered was May and June 1997. (Shown in **bold** below.) This is because a new Element 2 (Novice) and Element 3A (Technician) question pool went into effect on July 1, 1997. After July 1, the number of applicants and exam elements are greatly reduced.

Month	SESSIONS				PERSONS				ELEMENTS				SESSION SIZE			
	1995	1996	1997	1998	1995	1996	1997	1998	1995	1996	1997	1998	95	96	97	98
Jan.	942	845	812	739	8330	6228	5331	4108	14355	10353	8999	6782	9	7	7	6
Feb.	951	882	921	780	9516	7231	7154	5473	16230	12355	12087	9036	10	8	8	7
March	1067	1084	1035	886	11050	10196	8885	6537	18726	17245	14798	10829	10	9	9	7
April	1080	1088	1082	888	10895	9671	9284	5998	17896	16618	15714	10154	10	9	9	7
May	1089	971	992	863	10043	7557	7910	5848	16985	12666	13297	9660	9	8	8	7
June	977	914	1165	850	8045	6748	9314	5360	13563	11266	15215	8834	8	7	8	6
July	837	755	617	588	6526	5155	3172	3353	11086	8710	5087	5534	8	7	5	6
Aug.	821	819	696	662	6533	5674	4077	3891	11085	9435	6536	6602	8	7	6	6
Sept.	921	848	731	677	6498	5181	3700	3593	11096	8844	6078	5782	7	6	5	5
Oct.	840	847	736	696	6398	5271	4077	3860	10930	8892	6673	6527	8	6	6	6
Nov.	889	880	803	741	6986	6156	4782	4523	12007	10510	7964	7752	8	7	6	6
Dec.	845	791	747	650	6726	5323	4289	3957	11370	9053	7176	6631	8	7	6	6
Total:	11261	10724	10337	9020	97556	80391	71975	56501	165345	135945	119624	94123	8	7	7	6
	(3%)	(5%)	(4%)	(13%)	(6%)	(18%)	(11%)	(22%)	(15%)	(18%)	(18%)	(21%)				

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CUTTING EDGE TECHNOLOGY

■ **Intel's first microprocessor had 2,300 transistors.** 25 years later, how many transistors does the Pentium Pro have? Five and a half million! Within two years, we may see a single integrated circuit with 200 million transistors on board.

■ **Terahertz Technologies offers an adapter to allow fiber-optic signals to be viewed on a conventional oscilloscope.** Powered from a 9-volt battery, the Model TIA-950i is good for up to 500 MHz or 1 GHz. It plugs directly onto the scope's BNC connector.

■ **Bellcore has developed a plastic battery** that can be molded ...suitable for use in wireless applications. Several U.S. and far east manufacturers are racing to have it available soon.

■ **The upcoming "Star Wars" film** will also debut a new theater sound system Dolby Digital-Surround EX. Up to 2,000 theaters are preparing for it.

■ **Semiconductor engineers say that the new silicon-germanium hybrid chips may be able to run as fast as 23 GHz** without self-destructing due to heat.

■ **Can you predict a bridge's impending collapse just by listening to it?** It may be possible. Buildings, towers, dams and bridges emit special acoustic signals when stressed to the cracking point. This is very much like the piezo-electric effect, which is the heart of the quartz crystal in your ham rig.

■ **The Metabo Corp. offers a rotary drill that won't puncture pipes or wires.** How can this be? The drill measures conductivity of what it's drilling by sending a constant current through the drill bit. If the bit strikes anything metallic, such as a pipe or conduit or wiring, the tool stops instantly.

■ **Several semiconductor manufacturers are racing to be the first to commercially release a 1-GHz microprocessor by the end of the year 2000:** Intel, Advanced Micro Devices, Sun and Compaq.

EMERGING COMMUNICATIONS

■ **Advertising-supported FREE long distance telephoning is here!** The

Broadpoint FreeWay system permits free long distance calling ...providing you listen to some advertisements before being connected. You call a toll-free "800" number, enter a PIN and the number you want to call. You get two free minutes of long-distance phone time for each 10-15 second advertising message you endure. See: <<http://www.broadpoint.com>>

■ **A year from now AT&T intends to move cable-based local telephone service into the mass market.** Its technology, consumer reach and telephone brand recognition are expected to persuade cable companies to upgrade their systems more quickly. The acquisition of TCI, the nation's largest cable operator, modernizes AT&T from a dreary long-distance company into a hot multimedia Internet player.

The firm also signed a joint-venture deal on Feb. 1st to offer local/long distance calling and high speed Internet access over Time-Warner's cable systems in 33 states. The TCI and Time-Warner deals give AT&T the potential to offer local phone service to nearly half of the nation's homes. In addition, AT&T will sign deals with still other cable operators this Spring. Cost of cable phone calls will be about 20-25% less than traditional wireline.

AT&T is expected to reduce its dependence on wireline long distance to 30 percent within three years. Cable phone service will be expanded to ten cities later this year. A pilot program is now underway in Fremont, California. Within five years almost half of its revenue will come from cable video, local cable-based telephone and high-speed data services.

AT&T will pay cable operators \$10 to \$15 for every home that has two-way cable capability and an additional \$1.50 (increasing to \$6) monthly for subscribers that sign up for cable telephone.

At first AT&T will use traditional "circuit switching" technology ...that is every conversation takes up an entire phone line. In mid 2000, the system will change to a more efficient "packet switching" system based on the Internet.

You can find out if your area has cable-modem service available by checking: <www.cstv.org/modem/isp>

■ **The DBS (direct broadcast satellite) landscape is narrowing!** It is basically down to two big players. DirecTV (owned by Hughes) has acquired both USSB (United States Satellite Broadcasting) and PrimeStar.

PrimeStar's 2.3 million customers will

be converted to the DirecTV system during the next two years. DirecTV subscribers will eventually be able to receive 400 DBS channels. That is if you have a new-generation receiver and an 18-inch dish antenna that can point at different satellite dish orbital locations in space.

EchoStar's DISH network just added more satellite capacity from News Corp. and MCI WorldCom and also plans to offer up to 400 channels.

Present day cable-TV carries up to 80 channels. And with new digital system upgrades, can deliver 200 channels ...about half of what you will be able to get from DBS.

Both DirecTV and the DISH network are looking at delivering high-definition TV channels.

■ **Family Radio Service radios are everywhere!** Motorola's palm-sized no-license-required "TalkAbout" 2-way radio was a big hit at the recent Consumer Electronics Show. The \$89.95 1/2-watt walkie-talkie operates in the 462/467-MHz Family Radio Service. The 14-channel radio has a range of less than a mile. Maxon and Tekk showed FRS 14-channel radios at \$79.95. Kenwood's "FreeTalk", Icom's IC-4008A and Yaesu's "Adventurer" all sell for around \$120. Midland and Whistler had single channel FRS radios priced at \$59.95. (Street prices may be different.) Standard, Cherokee, Alinco, Uniden, Cobra, and Ericsson GE also have them. All are powered by 2 to 5 "AA" or "AAA" Ni-Cad or alkaline batteries.

■ **1998 will go down in history as the year that the Internet went mainstream** as "dot-com" addresses began appearing everywhere! The Pew Research Center, Washington, DC conducted a nationwide telephone survey of 3,184 adults in Nov. 1998. You can find a summary of the results at: <www.people-press.org/tech98sum.htm> No longer is the Internet only for academics, or nerds or the affluent. People joining the Internet now resemble the demographics of the real world.

Almost half (46%) of all Web users joined the Internet for the first time in 1998 with more than half being women (52%). 12% (22 million) of ALL Americans go online every day, compared with only 3% in 1995.

And of the new users, 65% have household incomes below \$50K/year. Only 29% were college graduates - compared to 45% who were on before 1998.

Even before the Christmas rush, 32%

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purchased something on the Internet in 1998 compared to 8% in 1995. But security issues are still holding e-commerce back. 61% of those who have not made a purchase are concerned about credit card security.

While the study concludes 41% of all adults are now online, there is still a big opportunity for growth since most people are still not on the Web. The No. 1 online activity is e-mail with 35% of all U.S. adults – and 85% of those online – sending e-mail (33% send e-mail every day.)

Surprisingly, Americans are not overly concerned about computers crashing in the Year 2000. Only 13% worry a lot that computer systems will fail next year. Web users put more value on the accuracy of information on the Internet than do Americans who don't go online.

■ **The downside of the online Information Age.** "Computer-assisted communication is coming on like a steam roller," says John Locke, author of *"The De-Voicing of Society."* He says that face-to-face conversations are almost a thing of the past. They have been replaced by e-mail, faxes, letters, the telephone and computer chats.

"The Internet and television reduce human contact by keeping people entrenched in their homes for hours on end instead of out in the world where they could make new friends, maintain old ones, and involve themselves in the community."

And according to Deborah Sawyer, president of *Information Plus*, a Buffalo, NY research firm, **another liability of the Internet is the increase in Information quantity and the decrease in quality.** "This information is highly repetitious, skewed, and often hopelessly inaccurate, but that seems to escape the notice of those who believe in the virtues of cyberspace. ...There is little copy editing, or fact checking. Anything and everything gets circulated in electronic form, including wild rumors, junk science, appalling misinformation, and moronic gibberish. ...people believe as gospel truth anything that comes out of a computer."

■ **Morse code phased out** – The following news article was distributed by the Reuters News Syndicate on February 1, 1999 – the day that GMDSS – the satellite-based Global Maritime Distress and Safety System – officially starts for communications at sea.

End Of Road For Morse Code's Dots And Dashes – By Paul Majendie

LONDON (Reuters) - Morse Code, which spelt out the demise of the Titanic and the end of two World Wars, Monday fell victim to the relentless march of technology. For those in peril on the sea, three dots, three dashes and three dots once spelt out SOS – the universally recognized call sign for a ship in distress. Now Morse is being replaced by a satellite-based "Mayday" system on all ships over 300 tons which have to carry satellite and radio equipment for sending and receiving distress alerts.

"Morse is a system that has played an incalculable part in the development of trade and history itself – but it has now died of old age," said Roger Cohn of the International Maritime Organization.

It was invented in 1832 – appropriately enough on a Transatlantic sea crossing – by Massachusetts portrait painter Samuel Morse.

His system, the 19th century precursor of the Internet, was hailed as in its heyday as "the instantaneous highway of thought."

By the time of his death in 1872, the world boasted 650,000 miles of telegraph lines on land and 30,000 miles of submarine cable. With Marconi's invention of the wireless, Morse Code was given a new lease of life. In 1899, the first shipwreck was reported by Morse Code in the English Channel.

By 1910, Morse had even trapped its first murderer when the notorious British killer Dr. Crippen was trapped. A message was tapped out to the liner *Montrose* on which he was trying to escape to Canada with his mistress. Tragedy struck in 1912 when the fateful message "SOS. Come at once. We have struck berg" was tapped out by the *Titanic*.

Hundreds of lives could have been saved by the liner *California*, just miles away. But its radio operator was not on duty and never heard the message. From then on, all ships maintained a 24-hour radio watch.

The radio telegraph station in Isahaya, Japan closed Sunday after more than 90 years of operation.

And Scottish coastguards, who picked up a Morse Code message from a listing cargo ship last month, confessed they were so surprised that they thought it was a joke.

The London Times, reflecting nostalgically on the 19th century answer to e-mail, said in an editorial Monday "Morse broadcast the cease-fires of both World Wars."

"It was used by generals and spies, speculators, journalists and prisoners communicating with the next cell." And then it concluded sadly... "Over and Out."

COMPUTER INFO

■ **Computer printers now use more paper than photocopiers.** Most people print a master copy of something on paper and then use a photocopier to make copies of it. Some manufacturers are trying to change that with the "mopier" – a printer that is designed to make multiple copies.

■ **Computers now produce over one billion pages of output a day in the U.S. alone.**

■ Both Micro Center (a chain of 13 Columbus, Ohio-based computer stores) and PrecisionTec LLC (Costa Mesa, CA) have introduced **\$399.00 retail computers.** The monitor is not included. Check out: <www.microcenter.com> and <www.precisiontec.com>

■ **Because of the sheer amount of work – and therefore money – involved in writing powerful computer programs, software companies sometimes protect their intellectual property against copying by requiring the user to install a "dongle" – a small, special plug – onto the computer's printer port.** The software won't run without it. This has often been thought of as nothing more than a minor encumbrance, but lately some of these dongles have been reported as not working on the new Pentium Pro and Pentium II motherboards. The dongles simply can't keep up with the faster speeds of the data buses.

■ **It looks like Microsoft will not be coming out with Windows 2000 after all.** It may extend the life of Windows 98 through 2003. The company still intends to base its next major consumer operating system release on Windows NT.

■ **Market researcher, International Data Corp., of Framingham, MA reports that 12% more PCs were sold world wide in 1998 vs. 1997.** Compaq Computer remained No. 1 in both the U.S. and the world. In the U.S., Compaq has an 18.1% share, Dell: 12.8%. No. 3 is now Gateway followed by IBM – both with 9.1 percent of the market. Hewlett-Packard was No. 5 with 7.2 percent. Over half of all U.S. households now have a PC

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with 37% of U.S. homes being on the Web. The United States and Europe account for two-thirds of 1998 PC shipments.

■ **You can now program your very own DVD at home** – if you've got the money. Pioneer offers the only write-once DVD drive on the market. Cost \$17,000. Prices are expected to come down over the next couple of years.

■ **Forget passwords! There are now all sorts of security devices to prevent unauthorized access to a computer.**

Compaq of Houston is launching a fingerprint reader that costs under \$100. If the print doesn't match, the PC doesn't work. It plugs into the printer port of your PC.

IrisScan of New Jersey has an eye-recognition system. The user looks into a digital camera that captures an image of the iris, the colored ring around the pupil. The PC operates only after it sees a match-in pattern.

SatLink of Tampa, FL uses speech recognition technology to check a voice against a stored recording.

Visionics of New Jersey and Polaroid Corp. have a device that checks a user's entire face against logged facial features.

And RF Ideas of Illinois has developed a user-proximity sensor. The user wears a pendant with a radio transponder. Access is blocked as soon as the user leaves the vicinity of the computer

INTERNET NEWS

■ **You can now use the Internet to check up on your child or pet**, no matter where in the world you are. Several companies offer packages that include a digital camera and the software to connect to the Net. Day care providers may offer this service and more than a few pet-sitting services already do.

■ **The average Fortune 500 web site** comprises 1,500 web pages.

■ **The world's largest searchable directory of MP3 music files** just started operation as part of the Lycos Website. MP3, which stands for *Motion Picture Experts Group – Audio Layer 3*, is now the defacto standard for Internet music. The music industry considers MP3 files posted to the Internet as being pirated.

The beauty of MP3 is its high compression, high quality capability. For ex-

ample, a three-minute .wav file would take up about 30 MB of disk space, the same song recorded in a near CD quality MP3 file is around 2MB. Over 500,000 music files can be found by entering a song title or artist at <<http://mp3.Lycos.com>>

Lycos makes no claim about the legality of accessing the copyrighted music. According to <www.searchterms.com> (another interesting site!), "MP3" is now the No. 2 search word.

Lycos has been coming on strong as a portal recently. In the last year it has acquired home page builder *Tripod*; Web information service *WhoWhere*; and *Wired Digital*. All three involved stock swaps.

■ **Chat sites on the Web usually mean typing back and forth.** A new "Audio Chat" site launched on Jan. 31st that actually lets users talk back and forth. Free downloadable software allows you to enter existing audio chat rooms or to create your own! <www.HearMe.com> The technology will also be licensed to various portal sites.

■ **There are tons of financial sites on the World Wide Web but the most active, by far, is Charles Schwab Corp.** Its Web site recorded more than one billion hits in January as trading and research by customers over the Internet surged. The highest single day was 55 million hits on Jan. 11. Schwab's customers assets now amount to more than \$500 billion. It was \$350 billion at the end of 1997. Schwab shares are up 178 percent in the last six months, boosted by the mania investors have exhibited for anything that's Internet related. More than 25% of all Internet stock trading goes through Schwab. (Reported by Bloomberg News Service.)

■ **Portal sites are accomplishing what network computers (NCs) set out to do.** That is offering application software over the Internet. Web-based e-mail, scheduling software, address and other databases ...and other "productivity" programs are being offered (or planned) by Yahoo, Excite, NetCenter and Lycos. And we hear server-based word processing and spread sheets are on the horizon.

Once high speed Net access has been deployed, your desktop of the future will undoubtedly be a portal site's opening page. The big advantage is that your "office" (accessed with a password) will be available where ever there is a PC and a connection to the Internet. And the Internet becomes the network for companies

that are not already networked.

Microsoft has been slow to recognize the threat of Internet-based software to its application program dominance.

■ **Web portal, Yahoo! announced that it is acquiring web community GeoCities for \$3.56 billion** in stock.

The deal is the latest in a series of big dollar Internet consolidations. The At-Home (cable TV distributed) network recently agreed to purchase Yahoo competitor Excite for \$6.7 billion. America Online is buying Netscape for more than \$4 billion. And Snap! – created by CNet Inc. – has been "snapped" up by NBC. The big Internet players are now AOL, Yahoo, AtHome, Go and Snap. Will they all survive?

GeoCities is a community site that hosts Web pages created by individuals. Softbank Corp. of Japan is a major investor in both Yahoo! and Geocities.

GeoCities' went public at \$17/share last August and more than doubled on its first day of trading. Its huge Web traffic attracts sizeable advertising dollars. One Web research company said it ranks third in "visits" with nearly 19 million users. AOL is first with 28 million, Yahoo second with 27 million. The GeoCities acquisition will make Yahoo the number one visited website. With a market capitalization (value) of \$38.4 billion, Yahoo has yet to make a profit.

■ **All systems are "Go!" On January 12th, the Walt Disney Company and Infoseek Corporation launched the "Go" Network.** The portal site combines the brands of Infoseek and Disney including ABCnews.com, ESPN.com, Mr. Showbiz, Disney.com and Disney's Blast Online. In November, Disney paid over \$200 million for its stake in Infoseek. Notably absent from the "Go" home page, however, are any references to Disney. <<http://www.go.com>>

■ **And still another huge Web portal is on the way! Compaq Computer – which owns the Alta-Vista search engine – has revealed plans to spin off Alta-Vista** though an IPO (initial public offering). It will be known as the Alta-Vista Company with the goal to make AltaVista the leading destination site for information and e-commerce on the Internet.

AltaVista is already the ninth largest individual domain on the Internet getting more than 20 million hits a month. With 52 index search-related patents, AltaVista holds the the "Fastest Search Site on the

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Internet" rating from Search Engine Watch. And it has the "#1 index of the Web" according to the Guinness Book of World Records.

Separately, AltaVista announced a technology agreement with Microsoft, under which the Microsoft Network (MSN) will promote Alta Vista as its primary search engine. In return, AltaVista will use Microsoft's free Hotmail and future instant messaging service. Compaq also is in the process of acquiring Shopping.com for \$220 million which will be part of the new portal. <<http://www.altavista.com>> or <<http://www.av.com>>

In the meantime, Compaq is gearing up to compete more aggressively with Dell and Gateway who offer computers directly on the Web. There are also rumors that CompUSA will soon join the fray by spinning off its made-to-order PC business into a separate company.

■ **Netcom, a national ISP (Internet Service Provider) has formed a joint venture with Network Solutions** to sell domain name registration services. Network Solutions is the exclusive global registrar for names within the .com, .net, .org, .edu, and .gov domains. In exchange, Network Solutions will establish a link to Netcom's dial-up network and web hosting services. The objective is to make it easier for Web sites to get Internet addresses.

■ **USA Today reported that AT&T is interested in buying the Microsoft Network (MSN.)** AT&T would absorb MSN into its WorldNet Internet Service. In exchange, AT&T would adopt and promote Microsoft Windows NT software. MSN has about 2 million subscribers.

■ **America Online Inc. reported a profit of \$121 million** for the quarter ending Dec. 31st as sales increased 62% to \$960 million. The company also disclosed plans for a 2-for-1 stock split. Receipts from advertising, e-commerce and revenue sources other than subscriptions was \$181 million. AOL's paying membership now stands at 15.1 million. Its subscribers spent a whopping \$1.2 billion in online purchases during the 1998 holiday season.

WASHINGTON WHISPERS

■ **The FCC's new Wireless Telecommunications Bureau Chief Tom Sugrue has changed his second-in-command.** Long-time WTB Deputy Chief Rosalind

Allen has been moved to a research position in the FCC's Office of Planning and Policy. Her replacement is James Schlichting, formerly deputy chief of the Common Carrier Bureau. The two worked together in the 1980s when Sugrue was a CCB official. The Amateur Service is regulated by WTB.

The Wireless Telecommunications Bureau also has a new Associate Bureau Chief, Dianne Cornell who was formerly chief of the International Bureau's Telecommunications Division.

We understand that more changes are ahead for the WTB as it begins its move to the FCC's new headquarters at The Portals in southwest Washington, DC. Key WTB officials will be moving Feb. 25 followed by the rest of the bureau in early March.

■ **Presently, only two nations in the world have not officially adopted the metric system.** One is the United States (five points if you can guess the other). If you're not used to it by now, you'd better be. On January 1, 2000, Europe will officially stop including English-equivalent measurements on packages, catalogs, manuals and labels. They will use metric, period. English-measurement-based goods will still be provided separately.

■ **The National Security Agency has banned Furby's** from its Fort Meade (Maryland) premises. Furby's were this Christmas' hot selling plush toy. It looks like an owl and has an imbedded computer chip that allows it to speak 100 words in English and 100 in "Furbish." NSA said that the Furby is a prohibited recorder since it has the ability to repeat what it hears.

■ **The FCC is delaying rulemaking (originally scheduled for Jan. 28th) directed at encouraging the use of high speed Internet connections.** While it is not expected to change the FCC position, the Commission opted to further fine tune the rulemaking in light of the Supreme Court's recent ruling that the FCC has the authority to set local telephone service pricing.

The government had argued that local competition will come sooner if price rules are set by the FCC rather than by each of the states.

The FCC plans to let the Bell Operating (local telephone) Companies offer high speed Internet connections through separate subsidiaries. Local ISPs and long distance companies complain that this would allow them to offer what amounts to long distance data service.

■ **The FCC ordered unlicensed WICE-FM to close down.** The station had operated from the Johnston, Rhode Island home of Steven Conti, 28 for more than three and a half years on 89.3 MHz. It went off the air in mid-January. More than 200 pirate broadcasters have been closed down during the past two years.

■ **Cable TV rates rose 7.3 percent in 1998.** You could get up to 20 percent increases in 1999 since the 1992 Cable Act deregulates price controls effective March 31.

AMATEUR RADIO

■ **This from the Wireless Institute of Australia's VK National News.** (The WIA is Australia's national amateur radio society.)

"RadCom Act Review - The Department of Communications Information Technology and the Arts (DOCITA) has issued a 124-page discussion paper on the review which is being closely examined by the WIA. The DCITA paper makes a very interesting statement and refers directly to Morse code proficiency for radio amateurs and we quote in part:

'Operator proficiency requirements are generally maintained to avoid interference (this is particularly the case for amateurs).' It continues by noting that operator proficiency requirements are also needed as part of Australia's international treaty obligations, but then talks about potential disadvantages of them.

'For example, it is sometimes suggested that the examination on Morse code skills for amateur licensees are to maintain the exclusivity of the amateur bands and enhance the exclusive privilege value of being qualified to use these bands, rather than enhancing the benefits Australians can enjoy by having more people use these bands.'

The Department is questioning the operator proficiency requirements and how best to certify that a person is proficient to be given a licence. This review of the Act is likely to have long term consequences for our service." [Thanks to: Graham Kemp VK4BB]

■ **Ed Willie W9PWG, who headed up the Milwaukee RAC-VEC** passed away after a heart attack on Friday, January 15th. Jack Krause W9JK is filling in until a new VEC chairman is appointed.

■ **A reader survey in CQ-VHF mag-**

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azine takes issue with the FCC's assertion that Tech and Tech Plus hams are interested mainly in FM and packet. 31% of Tech licensees did not agree with the FCC allegation. And among Tech Plus and higher class hams, only 37% say the FCC's statement applies to them or did when they held a Tech or Tech-Plus license. (63% say "not me.") There indeed appears to be interest in HF operation among the Tech and Tech Plus class. (February 1999 CQ-VHF, page 24.)

■ **The FCC has set aside the Amateur Extra Class license upgrades of four amateurs** who were examined at a W5YI-VEC test session on October 4 and 6, 1998 in Warminster and Spring City, Pennsylvania.

In a letter from FCC attorney Riley Hollingsworth, Philip DiGenova N3UNS (Bartonsville, PA), Kenneth L. Sharp AA3RU (Boyertown, PA), Wayne S. Bowden AA3RT (Millsboro, DE), and Elmer J. Smith N3UNR (Effort, PA) were advised that their applications for Extra Class licenses had been dismissed.

"Serious questions about the examination process remain," Hollingsworth said. "Our investigation is continuing and we have not determined what action to take regarding the licensees administering the examination session."

■ **The United Kingdom apparently will be adopting an Amateur Radio examination system similar to that used in the U.S.** As of September 1999, expanded banks of examination questions will be released to the public. The objective is to make it easier and less costly for UK amateur radio clubs to become test centers. Also, the criteria needed to become a registered examination center will be relaxed.

And, at the request of the Radio Society of Great Britain (RSGB), the "City and Guilds" examining authority is now considering making the Radio Amateurs Examination (RAE) available on demand. Currently only two examination dates are held annually.

The RSGB has become concerned at the reduction in the number of schools and colleges participating in Amateur Radio courses and licensing examinations. The Society is also hoping that more clubs will become registered examination centers. A major obstacle has been the expense involved.

However, the RSGB has now agreed that any club with access to a suitable examination location and a responsible per-

son to act as local exam secretary, will be able to apply to become a satellite venue of the RSGB HQ Examination Center. This should enable exams to be run in more places at lower cost to the club.

■ **The "First Class CW Operators' Club"** is a British-based CW club "dedicated to excellence in Morse code." It was founded in 1938 and has a limited membership of 500 world-wide. FOC's president is G3WGV.

It appears that their many British members looked for a way to live with Radio Society of Great Britain's new Morse policy - and found one being fully compliant with RSGB's statements.

The official RSGB policy as applies to Morse code now is as follows:

"The maintenance of Morse as a mandatory requirement for access to the HF bands is IARU policy. [The RSGB] Council, however, now believes that this position cannot be sustained in the longer term and will be opening discussions with IARU societies and other interested bodies to reconsider the position to be adopted at the [ITU] World Radio Conference in 2001, when the matter of Morse as a necessary qualifier for access to HF bands is likely to be considered."

That was copied verbatim from the June 1998 edition of *RadCom*, the RSGB Journal. Its author is RSGB President Ian Kyle, G8AYZ.

The First Class CW Operators Club now agrees that this mode should not be a mandatory, but rather an optional part of the HF license examination.

The FOC also believes that the CW subband at 28 MHz could be reduced, while 30m (10 MHz) should keep its CW-only status. (Feb. 1999, *RadCom* newsletter)

■ **The February 1999 ULS (Universal Licensing System) Online Newsletter** says the: "The FCC anticipates deploying the remaining licensing systems in ULS in the following sequence, with all services to be deployed by the end of 1999:

Ship
(first quarter, calendar year 1999)

Microwave
(second quarter, calendar year 1999)

Commercial Radio Operator Licenses
(third quarter, calendar year 1999)

Marine Coast and Aviation Ground
(third quarter, calendar year 1999)

Amateur
(fourth quarter, calendar year 1999)

Land Mobile
(fourth quarter, calendar year 1999)

The ULS is a browser-based licensing

system that consolidates all licensees from different radio services into a single database. It requires new application forms and procedures. The ULS Newsletter is at: <www.fcc.gov/wtb/uls/newsletter/>

■ **Nominations for the 1999 Young Ham of the Year (YHOTY) Award are open.** May 30th is the last day for nominations to be postmarked for consideration in this years program. The Newsline Young Ham of the Year Award is open to any young United States radio amateur under the age of 18 and living in the 48 continental United States. Those nominated will be judged based on their overall involvement in Amateur Radio and their contributions through Amateur Radio to society.

Thanks to Yaesu USA Corporation, this years winner will receive an expense paid trip to the Huntsville Hamfest this August where he or she will receive the award. The winner also gets to spend a week in Spacecamp Huntsville as the guest of CQ Magazine. A nominating form is available free of charge from the website at <www.arnewline.org> or by submitting a self addressed stamped envelope to the Newsline Young Ham of the Year Award, 28197 Robin Avenue, Santa Clarita California 91350.

■ **The FCC has sent a stern warning letter to Anthony Barben N2WNF of Brooklyn, NY.** The Commission's Riley Hollingsworth said it had evidence that Barben has "...been deliberately and maliciously interfering with VHF repeater operations of other licensed Amateurs in your area. Our evidence indicates that you have engaged in harassment, malicious interference and transmitting FM phone signals on 144.100 MHz."

Hollingsworth cautioned Barben that "Operation of the type described above - even one incident - will immediately result in a monetary forfeiture being levied against you and in revocation proceedings before an Administrative Law Judge." He also said Barben's transmitting equipment would be seized.

■ **Riley Hollingsworth also reversed the General Class upgrade of Richard Lalone KC5GAX of Fort Campbell, Kentucky.** He said "Information before the Commission indicates that the Physician's Certification used on your application to upgrade is not a valid document." Lalone's operator license was returned to Tech Plus and further enforcement action is being considered before an Administrative Law Judge.

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W4VG's - AMATEUR RADIO 2000 PLAN

The Reply Comments of Barnet "Jay" Jackson, W4VG on the FCC's plan to restructure the Amateur Service are interesting. Jackson, an FCC electronics engineer, headed up the Commission's ham examination program between 1978 and 1981. He still is with the FCC, but in a different capacity.

In his comments, Jackson said the number of amateur license classes should be reduced to four plus an additional institutional-type license. The 13 words-per-minute code exam would be abolished. But the 20 WPM Morse exam would be retained on an optional basis. He also proposed to reduce the number of written examination elements to three.

He changed his plan somewhat in his Reply Comments. Jackson said he "...now believes that Basic and Intermediate Class operators should be limited to ...no more than 250 watts PEP and that a Morse code testing requirement (at 12 wpm) is appropriate for the Expert Class. He calls his plan the

"Amateur Radio 2000" plan.

1. A new **Basic Class** conveys the same privileges as the Technician Class with the power level limited to 250 watts unless the licensee previously held a Tech license.

2. If it is determined that this provision can be made within the constraints of ...the International Radio Regulations, the **Basic Class** and Technician Class amateur radio licenses will (in addition to VHF/UHF privileges) convey the high frequency subband control operator privileges of the **Intermediate Class** operator license (listed below), except that HF power output is limited to 5 Watts.

3. **Basic Class** licensees must pass a short (25-50 question) VHF-oriented multiple choice written test. A Group D (2x3) call sign will be issued.

4. No new Technician Class licenses will be issued and will remain valid until they expire. A Technician license will be renewed as a **Basic Class** bearing the same call sign. No new Novice or Technician Plus Class licenses will be issued. Novice and Tech Plus licenses will be renewed as an **Intermediate Class** license.

5. The new **Intermediate Class** license conveys more frequency privileges than the Technician Plus Class but less than the General Class. Those frequency bands are:

1.81-1.96 MHz	3.60-3.75 MHz	3.90-4.00 MHz
7.05-7.15 MHz	7.225-7.300 MHz	10.10-10.15 MHz
14.05-14.15 MHz	14.25-14.35 MHz	18.068-18.168 MHz
21.050-21.200 MHz	21.350-21.450 MHz	24.890-24.990 MHz
28.10-29.70 MHz	All above 30 MHz.	

6. **Intermediate Class** maximum power level is 250 watts unless licensee previously held a Technician Plus license.

7. **Intermediate Class** requirements: additionally passing slow speed (5-6 wpm) code test and 25 question HF-oriented multiple choice examination. Telegraphy examination to be eliminated when International; Radio Rules permit. Call signs: Group C (1x3), if available. Otherwise Group D.

8. Existing Techs may upgrade to the **Intermediate Class** by also passing the 5 wpm Morse code test. When the S.25.5 is repealed, any Technician Class licensed will convey the privileges of the **Intermediate Class**.

9. No new General Class operator licenses will be issued and will continue to be valid until they expire. Existing General Class licenses will be renewed as an **Advanced Class**. General Class operators may upgrade at any time by passing the written exam. Advanced Class exam consists of 50 to 100 technical questions.

10. The Amateur Extra Class license is renamed as the **Expert Class**. The additional requirements for earning the **Expert Class** license are changed to emphasize real world achievement and contribution to the Amateur Service over testing.

11. **Expert Class** licensees must pass 12 or 13 wpm code and additionally submit proof of a substantial amateur radio achievement. This could include passing 20 wpm Morse code, contacting 100 or more foreign countries, using amateur radio to provide public or emergency service, authoring a technical article, establishing or maintaining an open repeater, beacon or packet bulletin board system, teaching an amateur radio licensing class, serving as a volunteer examiner, a volunteer in the amateur enforcement auxiliary, or as a traffic net manager, receiving an award from a major amateur radio organization, organizing an amateur radio club or making 200 contacts in an amateur radio contest.

12. The exact number of questions on each written examination will be determined by the National Conference of Volunteer Examiner Coordinators.

13. The FCC will issue, upon proper application, one or more **Institutional amateur radio licenses** to any eligible partnership, corporation, incorporated or unincorporated association, or state or local government. These licenses will replace outstanding RACES, club, military recreation and space station licenses upon renewal. **Institutional** licenses may also be obtained (if so desired) to cover repeater, remote base and auxiliary link stations. Existing membership and "trustee" requirements will be eliminated.

An entity may apply for and hold as many **Institutional** amateur station licenses as it requires to cover its amateur radio stations. Only one of these station licenses may bear a call sign that is not a Group D (2x3) call sign.